

## CLAIMS

What is claimed is:

1. A method of determining whether a composite service level agreement (SLA) may be met comprising:
  - calculating a baseline metric value for each of a plurality of component SLAs in a computing system that operate to form a composite SLA;
  - comparing a historical metric value for each of the plurality of component SLAs to their respective baseline metric value to determine if each historical metric is sufficient to ensure that the composite SLA is met.
2. The method as defined in claim 1 wherein calculating the baseline metric value for each of the plurality of component SLAs further comprises calculating a baseline success rate for each of the plurality of component SLAs from historical data.
3. The method as defined in claim 2 wherein comparing the historical metric value for each of the plurality of component SLAs further comprises comparing a historical success rate for each of the plurality of component SLAs to their respective baseline success rates to determine if each historical success rate is greater than or equal to each respective baseline success rate.
4. The method as defined in claim 1 wherein calculating a baseline metric value for each of the plurality of component SLAs further comprises calculating a baseline failure rate for each of the plurality of component SLAs from historical data.
5. The method as defined in claim 4 wherein comparing historical metric values for each of the plurality of component SLAs further comprises comparing historical failure rates for each of the plurality of component SLAs to their

respective baseline failure rates to determine if each historic failure rate is less than or equal to the respective failure rate for each of the component SLAs.

6. A method of determining whether a composite service level agreement (SLA) may be met comprising:

calculating a combined metric value from historical data for a plurality of component SLAs in a computer system that operate sequentially to form the composite SLA; and

comparing the combined metric value to a target combined metric value to determine if the combined metric value is sufficient to meet the target combined metric value.

7. The method as defined in claim 6 wherein calculating the combined metric value further comprises calculating a component probability distribution function (PDF) for each component SLA.

8. The method as defined in claim 7 wherein calculating the combined metric value further comprises computing a composite PDF from the component PDFs.

9. The method as defined in claim 8 wherein computing a composite PDF from the component PDFs further comprises performing a convolution of the component PDFs for each component SLA.

10. The method as defined in claim 9 wherein calculating the combined metric value further comprises:

calculating a cumulative distribution function (CDF) from the composite PDF;

determining the combined metric threshold by locating a value of the CDF at the target combined metric threshold value.

11. A computer readable media storing programs executable by a processor that, when executed, perform a method comprising:

calculating a required success rate for each of a plurality of component SLAs that operate to form a composite SLA;  
comparing a historical success rate for each of the plurality of component SLAs to their respective required success rate to determine if each historical success rate is sufficient to ensure that the composite SLA is met.

12. The computer readable media as defined in claim 11 wherein calculating a required success rate for each of a plurality of component SLAs that operate to form a composite SLA of the program further comprises:

calculating a combined historical failure rate for the component SLAs;  
calculating a contribution of each component SLA to the combined historical failure rate;  
multiplying the contribution of each of component SLA to the combined historical failure rate with a total allowed failure rate to obtain an allowed failure rate for each component SLA; and  
calculating the required success rate for each component SLA from the allowed failure rate of each component SLA.

13. A computer readable media storing programs executable by a processor that, when executed, perform a method comprising:

calculating a composite service level agreement (SLA) from historical data for a plurality of component SLAs that operate sequentially to form the composite SLA.

14. The computer readable media as defined in claim 13 wherein the program, when executed, further comprises comparing the composite SLA to a target SLA to determine if the composite SLA is sufficient to meet the target SLA.

15. The computer readable media as defined in claim 14 wherein calculating a composite SLA from historical data for a plurality of component SLAs of the program further comprises:

calculating a probability distribution function (PDF) from historical data for each of the plurality component SLAs; and  
combining the PDFs for each of the plurality of component SLAs.

16. The computer readable media as defined in claim 15 wherein combining the PDFs for each of the plurality of component SLAs of the program further comprises:

performing a convolution of the PDFs for each of the plurality of component SLAs to obtain a composite PDF; and  
summing values obtained from the composite PDF to obtain a cumulative distribution function (CDF); and  
determining the composite SLA as a value of the CDF at a promised metric threshold of the target SLA.

17. A system comprising:

a first computing system executing software performing a composite client service;

a second computing system executing software performing a component service, the second computing system coupled to the first computing system;

a third computing system executing software performing a component service, the third computing system coupled to first computing system;

wherein the composite service is formed, at least in part, on the component services of the second and third computing systems;  
and

wherein the first computing system is operable to determine whether a service level agreement (SLA) between the component service and a customer may be met based on SLAs between each component service and the composite service.

18. The system as defined in claim 17 wherein the second and third computing systems, and their respective component services, operate in parallel.

19. The system as defined in claim 17 wherein the second and third computing systems, and their respective component services, operate sequentially.

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